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<110> MIYAWAKI, Atsushi
KARASAWA, Satoshi

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<141> 2004-12-10

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<151> 2002-06-10

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Lys Pro Tyr Glu Gly Thr Gln Met Glu Asn Ile Lys Val Thr Lys Gly
        35                  40                  45


Gly Pro Leu Pro Phe Ser Phe Asp Ile Leu Thr Pro Asn Cys Gln Tyr
    50                  55                  60


Gly Ser Val Ala Ile Thr Lys Tyr Thr Ser Gly Ile Pro Asp Tyr Phe
65                  70                  75                  80
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Lys Gln Ser Phe Pro Glu Gly Phe Thr Trp Glu Arg Thr Thr Ile Tyr
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Glu Asp Gly Ala Tyr Leu Thr Thr Gln Gln Glu Thr Lys Leu Asp Gly
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Asn Cys Leu Val Tyr Asn Ile Lys Ile Leu Gly Cys Asn Phe Pro Pro
115 120 125

Asn Gly Pro Val Met Gln Lys Lys Thr Gln Gly Trp Glu Pro Cys Cys
130 135 140

Glu Met Arg Tyr Thr Arg Asp Gly Val Leu Cys Gly Gln Thr Leu Met
145 150 155 160

Ala Leu Lys Cys Ala Asp Gly Asn His Leu Thr Cys His Leu Arg Thr
165 170 175

Thr Tyr Arg Ser Lys Lys Ala Ala Lys Ala Leu Gln Met Pro Pro Phe
180 185 190

His Phe Ser Asp His Arg Pro Glu Ile Val Lys Val Ser Glu Asn Gly
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Thr Leu Phe Glu Gln His Glu Ser Ser Val Ala Arg Tyr Cys Gln Thr
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Cys Pro Ser Lys Leu Gly His Asn
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gagaacataa aagtcaccaa aggaggccct ctgccgttct cttttgatat cttgacgcct 180

aactgccaat atggaagcgt agccataacc aagtatacat cagggattcc agactacttt 240

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Gly Pro Leu Pro Phe Ser Phe Asp Ile Leu Thr Pro Asn Cys Gln Leu
    50                  55                  60

Gly Ser Val Ala Ile Thr Lys Tyr Thr Ser Gly Ile Pro Asp Tyr Phe
65                  70                  75                  80

Lys Gln Ser Phe Pro Glu Gly Phe Thr Trp Glu Arg Thr Thr Ile Tyr
                85                  90                  95

Glu Asp Gly Ala Tyr Leu Thr Thr Gln Gln Glu Thr Lys Leu Asp Gly
            100                 105                 110

Asn Cys Leu Val Tyr Asn Ile Lys Ile Leu Gly Cys Asn Phe Pro Pro
        115                 120                 125

Asn Gly Pro Val Met Gln Lys Lys Thr Gln Gly Trp Glu Pro Cys Cys
    130                 135                 140

Glu Met Arg Tyr Thr Arg Asp Gly Val Leu Cys Gly Gln Thr Leu Met
145                 150                 155                 160

Ala Leu Lys Cys Ala Asp Gly Asn His Leu Thr Cys His Leu Arg Thr
                165                 170                 175

Thr Tyr Arg Ser Lys Lys Ala Ala Lys Ala Leu Gln Met Pro Pro Phe
            180                 185                 190

His Phe Ser Asp His Arg Pro Glu Ile Val Lys Val Ser Glu Asn Gly
        195                 200                 205

Thr Leu Phe Glu Gln His Glu Ser Ser Val Ala Arg Tyr Cys Gln Thr
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Cys Pro Ser Lys Leu Gly His Asn
225 230

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gagaacataa aagtcaccaa aggaggccct ctgccgttct cttttgatat cttgacgcct 180

aactgccaac ttggaagcgt agccataacc aagtatacat cagggattcc agactacttt 240

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Gly Thr Val Asn Asn His His Phe Met Cys Glu Ala Glu Gly Glu Gly

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Lys Pro Tyr Glu Gly Thr Gln Met Glu Asn Ile Lys Val Thr Lys Gly
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Gly Pro Leu Pro Phe Ser Phe Asp Ile Leu Thr Pro Asn Cys Gln Met
    50                  55                  60

Gly Ser Val Ala Ile Thr Lys Tyr Thr Ser Gly Ile Pro Asp Tyr Phe
65                  70                  75                  80

Lys Gln Ser Phe Pro Glu Gly Phe Thr Trp Glu Arg Thr Thr Ile Tyr
                85                  90                  95

Glu Asp Gly Ala Tyr Leu Thr Thr Gln Gln Glu Thr Lys Leu Asp Gly
            100                 105                 110

Asn Cys Leu Val Tyr Asn Ile Lys Ile Leu Gly Cys Asn Phe Pro Pro
        115                 120                 125

Asn Gly Pro Val Met Gln Lys Lys Thr Gln Gly Trp Glu Pro Cys Cys
    130                 135                 140

Glu Met Arg Tyr Thr Arg Asp Gly Val Leu Cys Gly Gln Thr Leu Met
145                 150                 155                 160

Ala Leu Lys Cys Ala Asp Gly Asn His Leu Thr Cys His Leu Arg Thr
                165                 170                 175

Thr Tyr Arg Ser Lys Lys Ala Ala Lys Ala Leu Gln Met Pro Pro Phe
            180                 185                 190

His Phe Ser Asp His Arg Pro Glu Ile Val Lys Val Ser Glu Asn Gly
        195                 200                 205

Thr Leu Phe Glu Gln His Glu Ser Ser Val Ala Arg Tyr Cys Gln Thr
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Cys Pro Ser Lys Leu Gly His Asn
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aagcaatctt ttcctgaagg atttacctgg gaaagaacca caatctacga agatggggct 300

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            20                  25                  30

Lys Pro Tyr Glu Gly Thr Gln Met Leu Asn Ile Lys Val Thr Lys Gly
        35                  40                  45

Gly Pro Leu Pro Phe Ser Phe Asp Ile Leu Thr Pro Asn Cys Gln Met
    50                  55                  60

Gly Ser Val Ala Ile Thr Lys Tyr Thr Ser Gly Ile Pro Asp Tyr Gly
65                  70                  75                  80

Lys Gln Ser Phe Pro Glu Gly Phe Thr Trp Glu Arg Thr Thr Ile Tyr
                85                  90                  95

Glu Asp Gly Ala Tyr Leu Thr Thr Gln Gln Glu Thr Lys Leu Asp Gly
            100                 105                 110

Asn Cys Leu Val Tyr Asn Ile Lys Ile Leu Gly Cys Asn Phe Pro Pro
        115                 120                 125

Asn Gly Pro Val Met Gln Lys Lys Thr Gln Gly Trp Glu Pro Cys Cys
    130                 135                 140

Glu Met Arg Tyr Thr Arg Asp Gly Val Leu Cys Gly Gln Thr Leu Met
145                 150                 155                 160

Ala Leu Lys Cys Ala Asp Gly Asn His Leu Thr Cys His Leu Arg Thr
                165                 170                 175

Thr Tyr Arg Ser Lys Lys Ala Ala Lys Ala Leu Gln Met Pro Pro Phe
            180                 185                 190

His Phe Ser Asp His Arg Pro Glu Ile Val Lys Val Ser Glu Asn Gly
        195                 200                 205
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Cys Pro Ser Lys Leu Gly His Asn
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gaaccctgtt gcgagatgcg ctatacacgt gatggtgtgc tatgtggcca aacattaatg 480

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Lys Pro Tyr Glu Gly Thr Gln Met Glu Asn Ile Lys Val Thr Lys Gly
35 40 45

Gly Pro Leu Pro Phe Ser Phe Asp Ile Leu Thr Pro Asn Cys Gln Phe
50 55 60

Gly Ser Val Ala Ile Thr Lys Tyr Thr Ser Gly Ile Pro Asp Tyr Phe
65 70 75 80

Lys Gln Ser Phe Pro Glu Gly Phe Thr Trp Glu Arg Thr Thr Ile Tyr
85 90 95

Glu Asp Gly Ala Tyr Leu Thr Thr Gln Gln Glu Thr Lys Leu Asp Gly
100 105 110

Asn Cys Leu Val Tyr Asn Ile Lys Ile Leu Gly Cys Asn Phe Pro Pro
115 120 125

Asn Gly Pro Val Met Gln Lys Lys Thr Gln Gly Trp Glu Pro Cys Cys
130 135 140

Glu Met Arg Tyr Thr Arg Asp Gly Val Leu Cys Gly Gln Thr Leu Met
145 150 155 160

Ala Leu Lys Cys Ala Asp Gly Asn His Leu Thr Cys His Leu Arg Thr
165 170 175

Thr Tyr Arg Ser Lys Lys Ala Ala Lys Ala Leu Gln Met Pro Pro Phe
180 185 190

His Phe Ser Asp His Arg Pro Glu Ile Val Lys Val Ser Glu Asn Gly

195 200 205

Thr Leu Phe Glu Gln His Glu Ser Ser Val Ala Arg Tyr Cys Gln Thr
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Cys Pro Ser Lys Leu Gly His Asn
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            20                  25                  30

Lys Pro Tyr Glu Gly Thr Gln Met Glu Asn Ile Lys Val Thr Lys Gly
        35                  40                  45

Gly Pro Leu Pro Phe Ser Phe Asp Ile Leu Thr Pro Asn Cys Gln His
    50                  55                  60

Gly Ser Val Ala Ile Thr Lys Tyr Thr Ser Gly Ile Pro Asp Tyr Phe
65                  70                  75                  80

Lys Gln Ser Phe Pro Glu Gly Phe Thr Trp Glu Arg Thr Thr Ile Tyr
                85                  90                  95

Glu Asp Gly Ala Tyr Leu Thr Thr Gln Gln Glu Thr Lys Leu Asp Gly
            100                 105                 110

Asn Cys Leu Val Tyr Asn Ile Lys Ile Leu Gly Cys Asn Phe Pro Pro
        115                 120                 125

Asn Gly Pro Val Met Gln Lys Lys Thr Gln Gly Trp Glu Pro Cys Cys
    130                 135                 140

Glu Met Arg Tyr Thr Arg Asp Gly Val Leu Cys Gly Gln Thr Leu Met
145                 150                 155                 160

Ala Leu Lys Cys Ala Asp Gly Asn His Leu Thr Cys His Leu Arg Thr
                165                 170                 175

Thr Tyr Arg Ser Lys Lys Ala Ala Lys Ala Leu Gln Met Pro Pro Phe
            180                 185                 190
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His Phe Ser Asp His Arg Pro Glu Ile Val Lys Val Ser Glu Asn Gly
195 200 205

Thr Leu Phe Glu Gln His Glu Ser Ser Val Ala Arg Tyr Cys Gln Thr
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Cys Pro Ser Lys Leu Gly His Asn
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Lys Pro Tyr Glu Gly Thr Gln Met Glu Asn Ile Lys Val Thr Lys Gly
        35                  40                  45

Gly Pro Leu Pro Phe Ser Phe Asp Ile Leu Thr Pro Asn Cys Gln Met
    50                  55                  60

Gly Ser Val Ala Ile Thr Lys Tyr Thr Ser Gly Ile Pro Asp Tyr Phe
65                  70                  75                  80

Lys Gln Ser Phe Pro Glu Gly Phe Thr Trp Glu Arg Thr Thr Ile Tyr
                85                  90                  95

Glu Asp Gly Ala Tyr Leu Thr Thr Gln Gln Glu Thr Lys Leu Asp Gly
            100                 105                 110

Asn Cys Leu Val Tyr Asn Ile Lys Ile Leu Gly Cys Asn Phe Pro Pro
        115                 120                 125

Asn Gly Pro Val Met Gln Lys Lys Thr Gln Gly Trp Glu Pro Ser Cys
    130                 135                 140

Glu Met Arg Tyr Thr Arg Asp Gly Val Leu Cys Gly Gln Thr Leu Met
145                 150                 155                 160

Ala Leu Lys Cys Ala Asp Gly Asn His Leu Thr Cys His Leu Arg Thr
                165                 170                 175

Thr Tyr Arg Ser Lys Lys Ala Ala Lys Ala Leu Gln Met Pro Pro Phe
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180 185 190

His Phe Ser Asp His Arg Leu Glu Ile Val Lys Val Ser Glu Asn Gly
195 200 205

Thr Leu Phe Glu Gln His Glu Ser Ser Val Ala Arg Tyr Cys Gln Thr
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Cys Pro Ser Lys Leu Gly His Asn
225 230

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